

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:
an image bearing member including a plurality
of switching elements that are arranged in a moving
5 direction and a generatrix direction of said image
bearing member; and
latent image forming means for forming a latent
image on said image bearing member, said latent image
forming means including a voltage generating means
10 for generating a voltage in each switching element in
accordance with an image signal.

2. An image forming apparatus according to
claim 1,
15 wherein each switching element includes
electrodes and at least one of said electrodes is
formed using an organic semiconductor.

3. An image forming apparatus according to
20 claim 1,
wherein said image bearing member has a drum
shape.

4. An image forming apparatus according to
25 claim 1,
wherein each switching element corresponds to
one dot of pixels of the latent image.

5. An image forming apparatus according to
claim 4,

wherein a peripheral length of said image
bearing member in the moving direction is an integral
5 multiple of the dot.

6. An image forming apparatus according to
claim 1,

further comprising optical communications means
10 for inputting the image signal into each switching
element.

7. An image forming apparatus according to
claim 6,

15 wherein said optical communications means
includes:

a light-receiving unit that is provided in a
non-image area of said image bearing member in which
no image is formed; and

20 a light-emitting unit that irradiates said
light-receiving unit with light.

8. An image forming apparatus according to
claim 1,

25 further comprising radio wave communications
means for inputting the image signal into each
switching element.

9. An image forming apparatus according to
claim 1,

further comprising a developing apparatus that
develops the latent image using developer,

5 wherein said developing apparatus includes a
developer carrying member that carries the developer
to a developing position.

10. An image forming apparatus according to
10 claim 9,

wherein the developer is one-component
developer including toner.

11. An image forming apparatus according to
15 claim 9,

wherein the developer is two-component
developer including toner and carrier.

12. An image forming apparatus according to
20 claim 9,

wherein the developer is developer produced by
dispersing toner in an insulation liquid.

13. An image forming apparatus according to
25 claim 9, wherein a toner image is formed on said
image bearing member by said developer carrying
member;

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said image forming apparatus further comprises density detecting means for detecting a density of the toner image formed on said image bearing member, and

5 a voltage applied to each switching element is set on the basis of a detection result of said density detecting means.

14. An image forming apparatus according to
10 claim 9, wherein: a toner image is formed on said image bearing member by said developer carrying member;

15 said image forming apparatus further comprises density detecting means for detecting a density of the toner image formed on said image bearing member; and

a voltage applied to said developer carrying member is set on the basis of a detection result of said density detecting means.

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15. An image forming apparatus according to
claim 9,

25 further comprising a plurality of image forming portions that each includes said image bearing member and said developing apparatus,

wherein said plurality of developing apparatuses contain toner in different colors.

16. An image forming apparatus according to
claim 1,

further comprising transferring means for
transferring a toner image formed on said image
5 bearing member to an image receiving member,
wherein each switching element generates heat
during the transferring by said transferring means.

17. An image forming apparatus according to
10 claim 1,

wherein each switching element includes a
plurality of electrodes, and

wherein an image forming electrode, out of said
plurality of electrodes, which forms the latent image
15 is provided so as to protrude outward in comparison
with other electrodes.

18. An image forming apparatus according to
claim 17,

20 wherein when a length of a portion of said
image forming electrode that protrudes in comparison
with other electrodes is referred to as L, a cross-
sectional area of a pixel of the latent image in a
direction along a surface of said image bearing
25 member is referred to as S1, a density of the pixel
is referred to as D, and a cross-sectional area of
said image forming electrode in the direction along

the surface of said image bearing member is referred to as S2, the following relation exists among S1, D, and S2

$$L \geq S1 \times D / S2.$$

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19. An image forming apparatus according to
claim 17,

further comprising a conductive shield that
covers each switching element,

10 wherein said shield includes an opening portion
corresponding to said image forming electrode so that
said image forming electrode is exposed.

20. An image forming apparatus according to
15 claim 19,

wherein said conductive shield and said image
forming electrode are covered with an insulating
member.